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**Bureau of the Census**  
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**DSSD CENSUS 2000 PROCEDURES AND OPERATIONS MEMORANDUM SERIES B-7**

**MEMORANDUM FOR** Howard Hogan  
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**Subject:** Accuracy and Coverage Evaluation Survey:  
Missing Data Results

The attached document is a prototype of the report that we will prepare, per your request, following completion of applicable Accuracy and Coverage Evaluation Survey (A.C.E.) operations. The completed report is intended to aid the Executive Steering Committee on A.C.E. Policy (ESCAP) in its recommendation regarding the release of the statistically corrected data or the data without statistical correction as the P.L. 94-171 data. This report, together with other reports, will assess the operations and results of both the initial Census and the A.C.E. Both sets of assessments will be available to the ESCAP to aid the Committee in reaching its recommendation regarding the use of the statistically corrected data.

The attached prototype contains both empty table shells and a description of textual analysis that will assess specific aspects of the applicable operations. This report focuses on the results of the missing data procedures.

It is important to note that the conduct of the operations may lead us to modify the attached format by including additional information. It is also likely that descriptions and definitions will be enhanced or the data items could undergo revision. Conversely, we may conclude, for a variety of reasons, that some of the information set forth in the attached prototype may not be available. The attached document sets forth our conclusions prior to completion of the A.C.E. about what information would properly inform the ESCAP on this subject, but is subject to modification.

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# **Accuracy and Coverage Evaluation 2000: Missing Data Results**

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prepared by Patrick J. Cantwell

## **Introduction**

The Accuracy and Coverage Evaluation (A.C.E.) uses dual system estimation (DSE) to determine population estimates. The Census Bureau obtains a roster of the A.C.E. sample blocks independently of the Census. People in these blocks are interviewed and asked who lives there at the time of the interview, and who lived there on Census Day. Information is gathered to identify people who have moved in or out of the residence since the time of the census. The independent roster (P Sample) and the Census roster (E Sample) are matched; the results of the matching are then used to estimate the number of persons missed by both rosters.

Estimates are calculated separately within estimation domains called post-strata. Post-stratum estimates are then used to determine coverage correction factors to be applied to all people enumerated in the Census according to their specific post-stratum. Finally, corrected counts for any geographic area will be calculated by summing the corrected counts of people in the area. An appropriate rounding method is applied to produce integer counts of people at all levels.

For each component of the dual system estimator, certain required data are *not* collected on some cases in the A.C.E. To address this problem we apply missing data procedures. A summary of the procedures used in the 2000 A.C.E. is given in this document; greater detail can be found in DSSD Memorandum #Q-19; specifications for programming the same procedures are provided in DSSD Memorandum #Q-25. For an overview of the changes in these procedures during the 1990s—including the 1990 Post Enumeration Survey, the Census tests of 1995 and 1996, and the Census 2000 Dress Rehearsal (conducted in 1998)—see DSSD Memorandum #Q-3.

## **Background**

Before dual system estimates are calculated, we must account for missing information from the interviews of P-Sample people and from the matching operations. It should be noted that the term “missing data” applies after all follow-up attempts have been made. There are three main types of missing data in the A.C.E. and three processes used to correct for them.

The first type is household-level noninterviews in the A.C.E. The majority of these are households that were not interviewed because they could not be contacted or because the interview was refused. Another important component are occupied households where no one has *sufficient information for matching* (that is, a valid name and at least two other characteristics). The latter are also treated as household noninterviews. In general, the noninterview adjustment spreads the weights of household noninterviews among households that were interviewed in the same block cluster and type of basic address (defined below).

The second type is *missing demographic characteristics* used to assign people to a post-stratum. This situation occurs when a person is missing age, sex, tenure, race, or Hispanic origin. We impute tenure using a hot-deck procedure. Other characteristics, such as age, are imputed based on available demographic distributions. Still others use a combination.

Third, for a small number of A.C.E. people with “unresolved status,” we assign a probability for the appropriate status. For some respondents in the P Sample, there is not enough information available to determine the match status (whether or not the person matches to someone in the E Sample in the same block cluster or the extended search area) or the resident status (whether or not the person was living in the block cluster or the associated extended search area on Census Day). Determining resident status is important for P-Sample people because Census Day residents are used to estimate the number of matches in the P Sample. Similarly, for people in the E Sample, there may not be enough information to determine whether the person was correctly enumerated. Such cases where status cannot be determined are said to be “unresolved.” Generally for cases with missing status a probability is assigned based on information available about the specific case and about cases with similar characteristics.

(Note: E-Sample people without sufficient information for matching are *not* unresolved, but are considered as erroneous enumerations, that is, they are assigned a probability of enumeration of 0. In the P Sample, if the entire housing unit contains people without sufficient information for matching, the housing unit is treated as a noninterview (see above); otherwise, each such person has unresolved resident and match status.)

## Historical Treatment of Missing Data

In the 1990 Census, the Post Enumeration Survey (PES) was conducted to measure the undercoverage in the census counts and to provide adjusted counts for various demographic groups and levels of geography. Many design features of the PES were similar to those of the A.C.E. The PES also suffered from missing data in terms of (1) noninterviewed housing units in the P Sample, (2) missing characteristics needed to assign P- and E-Sample people to post-strata, and (3) unresolved status for some cases—match status in the P Sample or enumeration status in the E Sample. The status in (3) was necessary to compute the various components of the dual system estimates (DSEs) that are the basis of the correction of census data.

For the first two types of missing data, statistical procedures similar to those currently used in the A.C.E. were applied. A noninterview adjustment was used to spread the weights of noninterviewed housing units over the set of interviewed housing units. For missing demographic characteristics, a hot-deck imputation procedure or imputation based on available distributions of characteristics was used to make sure that all PES people could be assigned to a post-stratum. These are standard practices in the field of survey methodology. The main differences between the missing data procedures for the 1990 PES and 2000 A.C.E. lie with the people who have an unresolved status.

For the PES and the A.C.E., each person in the P Sample has a probability of matching to a person in the E Sample. This probability is said to be 1 if the person matches, and 0 if the person does not match. People whose match status is “unresolved”—still unknown or unclear *after all follow-up operations*—must be assigned a match probability between 0 and 1 to compute the appropriate component of the DSE. Analogous situations describe resident status for P-Sample people (in the 2000 A.C.E.) and enumeration status for E-Sample people (in the PES and the A.C.E.).

In the 1990 PES, match status in the P Sample and enumeration status in the E Sample had to be determined or estimated, but resident status was not an issue. Under Mover Procedure B used in the PES, we estimated *the number of movers* by counting in-movers in the PES block clusters, and we estimated *the match rate among movers* by trying to match the P-Sample in-movers to their census records (typically, in other block clusters not in the sample). The 2000 A.C.E. uses Mover Procedure C, whereby we continue to use the in-movers as a measure of the number of movers, but we estimate the match rate among movers as that among the out-movers from the A.C.E. block clusters. Because of the difference between mover procedures, the 2000 A.C.E. has to determine census-day resident status for the P Sample—to determine who is eligible for inclusion in the DSE—*while the 1990 PES did not*.

The procedure for assigning probabilities to unresolved cases (for match status in the P Sample or enumeration status in the E Sample) was also different in 1990. In the PES a hierarchical logistic regression model was used to estimate the missing probabilities for unresolved cases. A very large number of demographic and geographic characteristics were used as input into the model. In contrast, under the 2000 A.C.E. procedure, all resolved and unresolved cases are separated into groups called imputation cells according to a different set of operational and demographic characteristics. Within any cell, the weighted proportion of matches (or residents, or correct enumerations) among the resolved cases is assigned as the probability of a match to all unresolved cases in that cell.

After the 1990 Census and PES, three evaluations were conducted to assess the effect of the missing data procedures on the PES estimates, P1, P2 and P3. The findings are documented in the 1990 Coverage Studies and Evaluation Memorandum Series, #A-9, #B-4 and #C-2, respectively. For these evaluations, a stratified systematic subsample of 920 PES sample block clusters was selected. Following is a description of the three evaluations.

#### **Evaluation P1: Analysis of reasonable alternatives**

Evaluation P1 focused on P-Sample match status and E-Sample enumeration status. Match and correct enumeration probabilities were imputed under several alternatives. Undercount rates for each method were computed to determine the sensitivity of the estimates to the imputation method. Results from this evaluation showed that undercount estimates were robust under reasonable imputation methods.

## **Evaluation P2: Distribution of missing data rates**

One objective of PES evaluation was to determine the level and distribution of missing data by demographic and geographic groups, and to compare the distributions with the distribution of census undercount. Evaluation P2 examined the percent of noninterviews and proxy interviews, item imputation rates, and undercount (or overcount) estimates. Results from this evaluation showed that the rate of imputation for characteristics in the PES E Sample was higher than that in the P Sample for all characteristics. The evaluation also showed that imputation rates were highly correlated with estimated Census undercount.

## **Evaluation P3: Evaluation of imputation methodology for unresolved match status cases**

In Evaluation P3, cases with critical missing data (noninterview, missing match status, or missing enumeration status) were re-interviewed to assess the adequacy of the missing data models for PES production. P3 compared the total number of matches and correct enumerations from re-interviewed cases with the resulting estimated numbers of matches and correct enumerations, respectively, from the corresponding PES unresolved persons. The results showed a correlation between imputed match probabilities from the PES and match codes from the evaluation re-interviews. However, higher correct enumeration probabilities were not correlated with correct enumerations in the evaluation follow-up cases. For this reason, the imputation model worked better for P-Sample cases than for E-Sample cases.

## **For A.C.E. 2000**

Results from Census 2000 evaluations of missing data operations, conducted by the Planning, Research, and Evaluations Division of the Census Bureau, will not be finished in time to include in this document. Therefore, comparisons between 2000 A.C.E. and 1990 PES missing data results in this document focus on interview rates, rates and patterns of missing characteristics, and observations for unresolved cases—including rates within imputation cells and other categories of interest, and the results of the assignment of probabilities for these unresolved cases. Where direct comparisons between 2000 and 1990 are possible, we have placed the 1990 table after the Census 2000 table in this document.

## **Assessment**

[After completing the tables and analyzing their contents, we will summarize our observations and results in this section, including our overall assessment of the level and effect of missing data on the A.C.E. survey.]

[Observations and analyses on individual tables will follow many of these tables in the subsequent pages.]

## Results and Tables

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### A Note on Weighting

In the tables that follow, some numbers are unweighted, while others are weighted. For *weighted* frequencies and rates, we determine the weights as described below.

Some of the tables are listed more than once because they fall into more than one category.

**Unweighted Tables:** Tables 1a through 3c, 5 through 7b, 11, 12; A-2 through A-8, A-12 through A-14.

**Weighted Tables with Housing Units:** To produce weighted counts of interviews, noninterviews, etc., we use as housing-unit weights the initial P-Sample weights reflecting (1) the probability of selection at all stages of sampling (including the subsegmenting and sampling within large blocks) *except* for TES sampling, and (2) any potential trimming of the weights. Tables 1a, 1b, 1c; A-1, A-27, A-28.

**Weighted Tables with P-Sample Persons:** To produce measures involving P-Sample persons, we use two different sets of weights as follows:

- (a) For tables that measure *missing rates for the characteristics* age, sex, tenure, race, and Hispanic origin (listed below), we use the final P-Sample weights reflecting (1) the probability of selection at all stages of sampling *including* TES sampling, (2) the noninterview adjustment (a housing-unit factor applied to the persons in the housing unit), and (3) any potential trimming of the weights. Tables 3a through 4b; A-2 through A-8.
- (b) For tables that summarize results related to *missing resident or match status* (except for Table 3c), the weights incorporate (1) and (3) in (a). That is, we use the same weights as in (a) *except* that the noninterview adjustment factor *is not applied* because it is not used to compute the probabilities assigned to unresolved cases within an imputation cell. For these tables, the weighted rates in the tables should be consistent with the weighted numbers of resolved cases. Tables 5, 6a, 6b, 8, 9; A-9, A-10, A-15 through A-22, A-29 through A-39.

**Weighted Tables with E-Sample Persons.** To produce measures involving E-Sample persons, we use the final E-Sample weights reflecting (1) the probability of selection at all stages of sampling *including* TES sampling, and (2) any potential trimming of the weights. Note that there is no noninterview adjustment factor for the E Sample. Tables 3a, 3b, 4a, 4b, 7a, 7b, 10; A-11, A-23 through A-26, A-29 through A-39.

## Noninterview Adjustment

Noninterview adjustment is *performed only on the P Sample*. A.C.E. questions are asked to determine who currently lives in the household and who lived in the household on Census Day. Thus two rosters are created for each household, the Census Day roster and the A.C.E. Interview Day roster. Because of the use of Mover Procedure C estimation, there are two noninterview adjustments—one based on housing-unit status as of Census Day (i.e., the Census Day roster), and the other based on housing-unit status as of the day of the A.C.E. interview (i.e., the A.C.E. Interview Day roster).

Each of the two noninterview adjustments generally spreads the weights of noninterviewed units over interviewed units in the same noninterview adjustment cell, defined as the block cluster crossed with the type of basic address. For purposes of this adjustment, the type of basic address is grouped by single-family units, apartments, and all others.

The Census Day housing-unit status for P-Sample units is used to compute the Census-Day noninterview adjustment, which is then applied (at the appropriate level) to the person weights of non-movers and out-movers. Similarly, A.C.E. Interview Day housing-unit status is used to compute the A.C.E. Interview Day noninterview adjustment, which is then applied to the person weights of in-movers. More information can be found in DSSD Census 2000 Procedures and Operations Memorandum Series #Q-19 and #Q-25.

## Results - Noninterview Adjustment

Tables 1a, 1b, 1c, 2; A-1, A-27, A-28.

### Interview status categories:

**Interview:** A unit is an interview (for the given reference date) if there is at least one person (with name and at least two demographic characteristics) who possibly or definitely was a resident of the housing unit on the given reference date.

**Noninterview:** An occupied housing unit (as of the given reference date) that is not an interview is a noninterview.

**Vacant:** A housing unit is vacant if no one is living in it at the time of enumeration, unless the occupants are only temporarily absent. Units temporarily occupied at the time of enumeration entirely by individuals who have a usual residence elsewhere are classified as vacant. Transient quarters, such as hotels, are housing units only if occupied. (Thus, there are no vacant housing units at hotels and the like.) New units not yet occupied are classified as vacant housing units if construction has reached a point where all exterior windows and doors are installed and final usable floors are in place.

Vacant units are excluded from the housing unit inventory if they are open to the elements. Also excluded from the housing unit inventory are units with a posted condemnation sign or units that are used entirely for nonresidential purposes.

**Delete:** This category is for an address that no longer qualifies as a living quarters.

Table 1a shows the unweighted and weighted A.C.E. household interview status for Census Day for the United States. Table 1b shows the interview status for the A.C.E. interview day. These tables include data for Census 2000.

For comparison, Table 1c shows the interview status for interview day in the *1990 PES*. All three tables show the Total (number of housing units in the P Sample), the number of P-Sample housing units in each of the four interview status categories (Interviews, Noninterviews, Vacants, and Deletes) and the Interview Rate.

**Definition of interview rate:** The unweighted (weighted) interview rate is the unweighted (weighted) number of interviews divided by the unweighted (weighted) sum of interviews and noninterviews. See Attachment A, Table A-1, for weighted A.C.E. interview status for both census day and A.C.E. interview day for each state.

These tables summarize components of A.C.E. interview rates and allow comparison between Census day and A.C.E. interview day.

**Table 1a. Status of A.C.E. Household Interviews<sup>1</sup> for Census Day: 2000 Data**

	Number (Unweighted)	Number (Weighted)	Percent (Weighted)
<b>U.S. Total (Housing Units)</b>	<b>xxx,xxx</b>	<b>xxx,xxx,xxx</b>	<b>xx.x %</b>
<b>Interviews</b>			
<b>Noninterviews</b>			
<b>Vacants</b>			
<b>Deletes</b>			
<b>Interview Rate<sup>2</sup></b>			



**Table 1b. Status of A.C.E. Household Interviews<sup>1</sup> for A.C.E. Interview Day: 2000 Data**

	Number (Unweighted)	Number (Weighted)	Percent (Weighted)
<b>U.S. Total (Housing Units)</b>	<b>xxx,xxx</b>	<b>xxx,xxx,xxx</b>	<b>xx.x %</b>
<b>Interviews</b>			
<b>Noninterviews</b>			
<b>Vacants</b>			
<b>Deletes</b>			
<b>Interview Rate<sup>2</sup></b>			

**Table 1c. Status of PES Household Interviews<sup>1</sup> (for the Day of the PES Interview): 1990 Data \*\***

	Number (Unweighted)	Number (Weighted)	Percent (Weighted)
<b>U.S. Total (Housing Units)</b>	<b>xxx,xxx</b>	<b>xxx,xxx,xxx</b>	<b>xx.x %</b>
<b>Interviews</b>			
<b>Noninterviews</b>			
<b>Vacants</b>			
<b>Deletes</b>			
<b>Interview Rate<sup>2</sup></b>			

**\*\*** Checking to see if data are available to create this table.

<sup>1</sup> The A.C.E. household interview is an interview (for Census Day or A.C.E. Interview Day) if there is at least one person (with name and at least two demographic characteristics) who possibly or definitely was a resident of the housing unit on Census Day or A.C.E. Interview Day.

<sup>2</sup> The unweighted (weighted) interview rate is the unweighted (weighted) number of interviews divided by the unweighted (weighted) sum of interviews and noninterviews.

Table 2 shows the distribution of noninterview adjustment factors for census day and A.C.E. interview day. This table allows us to quickly observe one facet of nonresponse bias on A.C.E. data, because noninterview adjustment factors are a function of the nonresponse rate. We will insert a histogram to summarize Table 2 in graphical format.

**Table 2. Distribution of Noninterview Adjustment Factors for Census Day and A.C.E. Interview Day**

	Number of Housing Units with Corresponding Noninterview Adjustment Factor (Unweighted)					
	1	( 1, 1.5 )	[ 1.5, 2.0)	[ 2.0, 2.5)	[ 2.5, 3 )	≥3
<b>Census Day</b>	<b>xxx,xxx</b>	<b>xx,xxx</b>	<b>xx,xxx</b>	<b>x,xxx</b>	<b>x,xxx</b>	<b>xxx</b>
<b>A.C.E. Interview Day</b>						

**[ Histograms for Table 2 Above]**

## **Characteristic Imputation**

At times, persons in the P and E Samples are missing one or more of the following characteristics on the census or A.C.E. questionnaires: age, sex, tenure, race, or Hispanic origin. When missing, each of these items must be imputed so that the person can be assigned to a post-stratum for dual system estimation. Characteristic imputation is not carried out for other missing variables (with the exception of the unresolved status items discussed later) as they are not needed to determine post-stratification. The imputation methods for the P Sample and the E Sample differ, as each has different sources of data available to use for imputation.

P-Sample characteristic imputation for Census 2000 is nearly identical to that for the Dress Rehearsal. Imputation for a specific missing characteristic in the P Sample is not affected by the imputation for other missing characteristics. That is, the algorithms are applied independently. Before imputation begins, age and sex distributions are calculated nationally using the P-Sample data. Missing age or sex is then drawn from the appropriate conditional distribution. Tenure, race, and Hispanic origin are imputed essentially using a hot-deck procedure, where the data are sorted by cluster, then map spot number, then unit identifier. This essentially produces a geographic sort of the data file. Mover status for P-Sample persons is not considered when imputing characteristics. Details are found in DSSD Census 2000 Procedures and Operations Memorandum Series #Q-19 and #Q-25.

For a missing characteristic in the Census 2000 E Sample, whenever possible we use the actual value of the characteristic imputed in the census. That is, we match the E-Sample person record to its counterpart on the edited file for the entire 2000 Census, and extract the missing characteristic. In the unlikely event that an E-Sample record is still missing a required characteristic, the corresponding P-Sample procedure would be used.

NOTE: In the 1990 PES procedures for characteristic imputation for the E Sample, we actually imputed values for missing data separately from the census imputation; therefore, the E-Sample rates of imputation for the 2000 A.C.E. and for the 1990 PES are not directly comparable.

## **Results - Characteristic Imputation**

Tables 3a, 3b, 3c, 4a, 4b; A-2 through A-8.

Table 3a shows unweighted and weighted P-sample item missing data rates (imputation rates) for the five characteristics for which we impute in the P Sample. The Census 2000 characteristic imputation rates for the P Sample are broken down by proxy status and mover status. The last row of the table shows E-sample item missing data rates (imputation rates) for the same five characteristics. We also show the percentage of persons with one or more imputed characteristics in the last column of the table. This table allows comparisons of item missing data rates between the E Sample and the P Sample. Table 3b shows data from the 1990 Census.

**Table 3a. A.C.E. Characteristic Imputation Percent Rates for the P Sample by Proxy Status and for the E Sample: 2000 Data**

(Within cells, the first row contains unweighted frequencies or rates; the second row contains weighted frequencies or rates.)

	Total Persons	Percentage of Persons With Imputed Characteristic					Percentage of Persons with 1 or more Imputed Characteristics
		Age	Sex	Tenure	Race	Hispanic Origin	
P Sample							
Total	XXX,XXX	XX.X %	XX X %	XX.X %	XX X %	XX.X %	XX.X %
	XXX,XXX	XX.X %	XX.X %	XX.X %	XX.X %	XX.X %	XX.X %
Proxy Status							
Non-Proxy							
Proxy							
Mover Status							
Non-mover							
In-mover							
Out-mover							
E Sample**							
Total							

\*\* Checking to see if data are available to create this table.

**Table 3b. PES Characteristic Imputation Percent Rates for the P Sample by Proxy Status and for the E Sample: 1990 Data**  
(Within cells, the first row contains unweighted frequencies or rates; the second row contains weighted frequencies or rates.)

	Total Persons	Percentage of Persons With Imputed Characteristic					Percentage of Persons with 1 or more Imputed Characteristics
		Age	Sex	Tenure	Race	Hispanic Origin	
P Sample							
Total	XXX,XXX	XX.X %	XX.X %	XX.X %	XX X %	XX.X %	XX X %
	XXX,XXX	XX.X %	XX.X %	XX X %	XX.X %	XX.X %	XX.X %
Proxy Status							
Non-proxy							
Proxy							
Mover Status <sup>3</sup>							
Non-mover							
In-mover							
E Sample <sup>4</sup> **							
Total							

\*\* Checking to see if data are available to create this table.

<sup>3</sup> Out-movers are not included in these tables for the 1990 PES because Procedure B was used

<sup>4</sup> In the 1990 PES, characteristic imputation for the E Sample was done separately from the census imputation; therefore, the E-Sample imputation rates for 2000 A C E and for the 1990 PES are not directly comparable

Table 3c shows unweighted and weighted imputation rates for the same five characteristics by final resident status and final match status. This table shows whether item missing data rates vary by subgroup similarly to historical trends.

**Table 3c. A.C.E. Characteristic Imputation Percent Rates for the P Sample by Final Resident Status and Final Match Status**

(Within cells, the first row contains unweighted frequencies or rates; the second row contains weighted frequencies or rates.)

FINAL STATUS	Total Persons	Percentage of Persons With Imputed Characteristic					Percentage of Persons with 1 or More Imputed Characteristics
		Age	Sex	Tenure	Race	Hispanic Origin	
RESIDENT							
Confirmed Resident	xxx,xxx	xx.x %	xx.x %	xx.x %	xx.x %	xx.x %	xx.x %
	xxx,xxx	xx.x %	xx.x %	xx.x %	xx.x %	xx.x %	xx.x %
Confirmed Nonresident							
Unresolved Resident Status							
Total							
MATCH							
Match							
Nonmatch							
Unresolved Match Status							
Total							

See Attachment A, Table A-2 for Unweighted P-Sample Characteristic Imputation Percent Rates by State and Tables A-3 through A-8 for Unweighted and Weighted P-Sample Characteristic Imputation Rates by additional subgroups.

Tables 4a and 4b show the missing data rates for each post-stratification variable, along with the distribution of the item responses before and after imputation for the weighted P Sample, weighted E Sample, and the entire census.

**Table 4a. Distribution of Characteristics Before and After Item Imputation (Race and Hispanic Origin)**

Response	P Sample (Weighted)		E Sample (Weighted)		Census **	
	Before Imputation	After Imputation	Before Imputation	After Imputation	Before Imputation	After Imputation
<b>TOTAL</b>	<b>xxx,xxx,xxx</b>	<b>xxx,xxx,xxx</b>	<b>xxx,xxx,xxx</b>	<b>xxx,xxx,xxx</b>	<b>xxx,xxx,xxx</b>	<b>xxx,xxx,xxx</b>
<b>RACE</b>						
White Only						
Black Only						
AIAN <sup>5</sup> Only						
Asian Only						
NHPI <sup>6</sup> Only						
Other Race Only						
Multi-Race						
Missing Race						
<b>HISPANIC ORIGIN</b>						
Hispanic						
Non-Hispanic						
Missing Hispanic Origin						

\*\* Checking to see if data are available to create this table.

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<sup>5</sup> American Indian or Alaskan Native

<sup>6</sup> Native Hawaiian or Pacific Islander

**Table 4b. Distribution of Characteristics Before and After Item Imputation (Age, Sex, and Tenure)**

Response	P Sample (Weighted)		E Sample (Weighted)		Census **	
	Before Imputation	After Imputation	Before Imputation	After Imputation	Before Imputation	After Imputation
<b>TOTAL</b>	xxx,xxx,xxx	xxx,xxx,xxx	xxx,xxx,xxx	xxx,xxx,xxx	xxx,xxx,xxx	xxx,xxx,xxx
<b>AGE</b>						
0 - 17						
18 - 29						
30 - 49						
50 +						
Missing Age						
<b>SEX</b>						
Male						
Female						
Missing Sex						
<b>TENURE</b>						
Owner						
Non-owner						
Missing Tenure						

\*\* Checking to see if data are available to create this table.

## **Imputation of Status (Resident, Match, Correct Enumeration)**

After all follow-up activities are completed, there remains a small fraction of the A.C.E. sample people for whom we still do not have enough information to compute the components of the dual system estimator. Their status is said to be “unresolved.” We use imputation cell estimation to assign probabilities for P-Sample people with unresolved match or Census-Day resident status, and for E-Sample people with unresolved enumeration status.

All P- and E-Sample persons—resolved and unresolved—are separated into groups called imputation cells based on operational and demographic characteristics. We use different variables to define cells for P- and E-Sample people, and, among P-Sample people, to define cells for resolving match and resident status. Within each imputation cell the weighted proportion of matches (or residents or correct enumerations) among the cases with resolved status is calculated, and that value is imputed for all unresolved persons in the cell.



*Note: Some people are removed from the P Sample, including people who are considered to be fictitious, duplicates, geocoding errors, or not residents of the housing unit on census day. These people are not included in the following tables related to resident or match status.*

## **Results - Imputation of Status**

### **Resident Status**

Table 5 shows the final resident status for P-Sample persons for the U.S. in the 2000 A.C.E. by mover status and by region. The table also shows the weighted resident rates for resolved cases. Note that no persons actually received this rate because this rate is a weighted average over the all imputation classes. The final P-Sample resident status is broken down into

- (confirmed) resident
- (confirmed) nonresident
- unresolved resident status

**Resident** - The matched or nonmatched P-sample person is a resident of the housing unit on Census Day.

**Nonresident** - P-sample people are nonresidents of the cluster when they are fictitious, duplicates, geocoding errors, or should not have been included as a resident of the housing unit on census day. Nonresidents are removed from the P-sample.

**Unresolved Resident Status** - A matched or nonmatched P-sample person has unresolved resident status when the follow-up interview did not successfully determine the person's residence on census day. The resident status of the possible match is unresolved when the follow-up interview was not successful. The resident status is also imputed when the P-sample person had insufficient information for matching.

For Tables 5, 8, A-9, and A-15 through A-18, the *weighted resident rate* is determined by dividing the weighted number of confirmed residents by the weighted number of resolved cases--all confirmed residents and nonresidents. When calculating this rate, we only include persons with mover status of non-mover and out-mover.

(By definition, non-movers and out-movers should both be Census Day residents; however, we create the mover-status variable prior to field follow-up work. This work may reveal that a non-mover or out-mover was not actually a Census Day resident. For example, a person may report he or she lived in the housing unit since March 20. Preliminary operations would label this person a non-mover; however, follow-up operations may confirm this person moved into the housing unit on April 20. Therefore, this person is a confirmed non-resident for Census day.)

**Table 5. Final Resident Status for the P Sample in the A.C.E. by Mover Status and by Region**  
 (Within cells, the first row contains unweighted frequencies; the second row contains weighted frequencies and rates.)

P SAMPLE	Total Persons	Final Resident Status			Resident Rate for Resolved Cases
		Confirmed Resident	Confirmed Nonresident	Unresolved Resident Status	
U.S. Total	XXX,XXX	XXX,XXX	XXX,XXX	XXX,XXX	
	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
MOVER STATUS					
Non-mover					
Out-mover					
REGION					
Northeast					
South					
Midwest					
West					

See Attachment A, Table A-9 for weighted frequencies and rates for P-Sample Final Resident Status by State.

## Match Status

As with resident status, the match status of a P-sample person may be unresolved despite the attempts of field follow-up. Table 6a shows the final match status for P-Sample persons for the U.S. in the 2000 A.C.E. by mover status and by region. The table also shows weighted match rates for resolved cases. The final P-Sample match status is broken down into

- match
- nonmatch
- unresolved match status

**Match** - The P-sample person was found in the E-Sample listing of the search area; that is, in the cluster or in the surrounding block in either a housing unit or in group quarters.

**Nonmatch** - The P-sample person was not found in the search area. If the nonmatch was sent to follow-up, the person was confirmed to be a resident of the cluster on census day. If the nonmatch was not sent for a follow-up interview, a household member identified the person as a resident of the housing unit during the original ACE interview.

**Unresolved match status** - The match status is unresolved for possible matches with unsuccessful follow-up interviews and for P-sample people with insufficient information for matching and follow-up.

For Tables 6a, 6b, 9, A-10, A-19 through A-22, and A-29 through A-39, the weighted match rate is determined by dividing the weighted number of matches by the weighted number of resolved cases--the sum of matches and nonmatches. To calculate the probability of match status, we only consider Census Day confirmed residents and persons with unresolved resident status. That is, we exclude confirmed non-residents while calculating match probabilities.

*For comparison, Table 6b contains data from the 1990 PES.*

**Table 6a. Final Match Status for the P Sample in the A.C.E. by Mover Status and by Region: 2000 Data**  
 (Within cells, the first row contains unweighted frequencies; the second row contains weighted frequencies and rates.)

P SAMPLE	Total Persons	Final Match Status			Match Rate for Resolved Cases
		Match	Nonmatch	Unresolved Match Status	
U.S. Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	
	xxx,xxx	xxx,xxx (xx x %)	xxx,xxx (xx x %)	xxx,xxx (xx x %)	0 xx
MOVER STATUS					
Non-mover					
Out-mover					
REGION					
Northeast					
South					
Midwest					
West					

**Table 6b. Final Match Status for the P Sample in the PES by Mover Status and by Region: 1990 Data \*\***  
(Within cells, the first row contains unweighted frequencies; the second row contains weighted frequencies and rates.)

P SAMPLE	Total Persons	Final Match Status			Match Rate for Resolved Cases
		Match	Nonmatch	Unresolved Match Status	
U.S. Total	xxx,xxx xxx,xxx	xxx,xxx xxx,xxx (xx x %)	xxx,xxx xxx,xxx (xx x %)	xxx,xxx xxx,xxx (xx x %)	0 xx
MOVER STATUS <sup>7</sup>					
Non-mover					
In-mover					
REGION					
Northeast					
South					
Midwest					
West					

\*\* Checking to see if data are available to create this table.

See Attachment A, Table A-10 for weighted frequencies and rates for P-Sample Final Match Status by State.

<sup>7</sup> Out-movers were not included in the 1990 PES because Procedure B was used

## **Enumeration Status**

Table 7a shows the final enumeration status for the E Sample in the 2000 A.C.E. for the total U.S. and by region. This table consists of the Total Persons (number of persons in the E Sample), the Final Enumeration Status, and the weighted Correct Enumeration Rate for Resolved Cases. The final E-Sample enumeration status is broken down

- correct enumeration
- erroneous enumeration
- unresolved enumeration status

**Correct Enumeration** - E-sample people are correctly enumerated when they are matched to the P-sample or when they have been followed up and they should have been enumerated in this cluster.

**Erroneous Enumeration** - E-sample people are erroneously enumerated when they have another residence where they should be counted on census day, are fictitious, are duplicated, lived in a housing unit that was a geocoding error, or have insufficient information for matching and follow-up.

**Unresolved Enumeration Status** - E-sample people have unresolved enumeration status when the follow-up interview was unsuccessful. The E-sample person may have been followed up to obtain information about the E-sample nonmatch, possible match, matched person with unresolved resident status, or geographic work to obtain the location of the housing unit.

For Tables 7a, 7b, 10, and A-11, A-23 through A-26, and A-29 through A-39, the weighted enumeration rate is determined by dividing the weighted number of correctly enumerated persons by the weighted number of resolved cases (the sum of correctly enumerated and erroneously enumerated persons).

*For comparison, Table 7b contains data from the 1990 PES.*

**Table 7a. Final Enumeration Status for the E Sample in the A.C.E. by Region: 2000 Data**  
 (Within cells, the first row contains unweighted frequencies; the second row contains weighted frequencies and rates.)

<b>E SAMPLE</b>	<b>Total Persons</b>	<b>Final Enumeration Status</b>			<b>Correct Enumeration Rate for Resolved Cases</b>
		<b>Correct Enumeration</b>	<b>Erroneous Enumeration</b>	<b>Unresolved Enumeration Status</b>	
<b>U.S. Total</b>	xxx,xxx xxx,xxx	xxx,xxx xxx,xxx (xx.x %)	xxx,xxx xxx,xxx (xx.x %)	xxx,xxx xxx,xxx (xx.x %)	0.xx
<b>REGION</b>					
<b>Northeast</b>					
<b>South</b>					
<b>Midwest</b>					
<b>West</b>					

**Table 7b. Final Enumeration Status for the E Sample in the PES by Region: 1990 Data \*\***  
 (Within cells, the first row contains unweighted frequencies; the second row contains weighted frequencies and rates.)

E SAMPLE	Total Persons	Final Enumeration Status			Correct Enumeration Rate for Resolved Cases
		Correct Enumeration	Erroneous Enumeration	Unresolved Enumeration Status	
U.S. Total	XXX,XXX	XXX,XXX	XXX,XXX	XXX,XXX	
	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
REGION					
Northeast					
South					
Midwest					
West					

\*\* Checking to see if data are available to create this table.

See Attachment A, Table A-11 weighted frequencies and rates for E-Sample Final Enumeration Status by State.



Table 8 shows the imputation cells used for P-Sample cases with unresolved resident status, as indicated in DSSD Memo #Q-19. We created these cells with combinations of before follow-up match code, tenure, and two race/ethnicity groups. Each cell contains the following five values:

- 1) total persons
- 2) number of confirmed residents
- 3) number of confirmed nonresidents
- 4) number of persons with unresolved resident status
- 5) weighted resident rate for resolved cases

The first four values are all weighted frequencies.

The seven P-Sample before follow-up match code groups are defined in the table. Group 3, is divided into two parts. V3 is a variable defined for group 3, partial household nonmatches needing follow-up. The variable V3a includes persons in group 3 who are 18-29 years old and children of the reference person. V3b includes all other persons in group 3.

See Attachment A, Table A-12, for unweighted frequencies for Imputation Cells Used for Resident Status.

**Table 8. Imputation Cells Used for P-Sample Resident Status (Weighted Frequencies and Rates)**

Before Follow-Up Match Code Group		Final Resident Status (Weighted)	Owner		Non-owner	
			Non-Hispanic White Only	Others	Non-Hispanic White Only	Others
1 = Matches needing follow-up		TOTAL PERSONS	XX,XXX	XX,XXX	XX,XXX	XX,XXX
		Confirmed Residents	XX,XXX			
		Confirmed Nonresidents	XX,XXX			
		Persons with Unresolved Resident Status	XX,XXX			
		Resident Rate for Resolved Cases (Weighted)	0 XX			
2 = Possible matches		TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons with Unresolved Resident Status				
		Resident Rate for Resolved Cases (Weighted)				
3 = Partial household nonmatches needing follow-up	V3a	TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons with Unresolved Resident Status				
		Resident Rate for Resolved Cases (Weighted)				
	V3b	TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons with Unresolved Resident Status				
		Resident Rate for Resolved Cases (Weighted)				
4 = Whole household nonmatches needing follow-up, not conflicting households		TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons with Unresolved Resident Status				
		Resident Rate for Resolved Cases (Weighted)				
5 = Nonmatches from conflicting households		TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons with Unresolved Resident Status				
		Resident Rate for Resolved Cases (Weighted)				
6 = Resolved before follow-up		TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons with Unresolved Resident Status				
		Resident Rate for Resolved Cases (Weighted)				
7 = Insufficient information for matching		TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons with Unresolved Resident Status				
		Resident Rate for Resolved Cases (Weighted)				
TOTAL		TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons with Unresolved Resident Status				
		Resident Rate for Resolved Cases (Weighted)				

Table 9 shows the imputation cells used for P-Sample cases with unresolved match status as indicated in DSSD Memo #Q-19. We created these cells with combinations of mover status, housing-unit address match code, and imputation. Each cell contains the following five values:

- 1) total persons
- 2) number of matched persons
- 3) number of nonmatched persons
- 4) number of persons with unresolved match status
- 5) weighted match rate for resolved cases

The first four values are all weighted frequencies.

The P-Sample Address Codes used for creating these cells are (from DSSD Memo #Q-25)

- 1 = Housing Unit Matched during Housing Unit Matching
- 2 = Housing Unit Did Not Match during Housing Unit Matching
- 4 = Conflicting Households

Address code values of 2-3 are considered to be "Housing Units not matched during Housing Unit matching" for the purposes of match code group assignment.

See Attachment A, Table A-13, for unweighted frequencies for Imputation Cells Used for Match Status.

**Table 9. Imputation Cells Used for P-Sample Match Status (Weighted Frequencies and Rates)**

Mover Status	Final Match Status	Housing-Unit Address Match Code			
		Housing unit was a match (code 1) <sup>8</sup>		Housing unit was a Nonmatch or the household is conflicting (code 2 or 4)	
		No imputes	1 or more imputes	No imputes	1 or more imputes
Non-mover	Total Persons	XX,XXX			
	Matched	XX,XXX			
	Nonmatched	XX,XXX			
	Persons with Unresolved Match Status	XX,XXX			
	Match Rate for Resolved Cases (Weighted)	0.XX			
Out-mover	Total Persons				
	Matched				
	Nonmatched				
	Persons with Unresolved Match Status				
	Match Rate for Resolved Cases (Weighted)				
TOTAL	Total Persons				
	Matched				
	Nonmatched				
	Persons with Unresolved Match Status				
	Match Rate for Resolved Cases (Weighted)				

<sup>8</sup> The P-Sample Address Codes used for creating these cells are (from DSSD Memo #Q-25)

- 1 = Housing Unit Matched during Housing Unit Matching
- 2 = Housing Unit Did Not Match during Housing Unit Matching
- 4 = Conflicting Households

Address code values of 2-3 are considered to be "Housing Units not matched during Housing Unit matching" for the purposes of match code group assignment

Table 10 shows the imputation cells used for E-Sample cases with unresolved enumeration status, as indicated in DSSD Memo #Q-19. We created these cells with combinations of before follow-up match code group, imputations, and two Race/Ethnicity groups. Each cell contains the following five values:

- 1) total persons
- 2) number of persons correctly enumerated
- 3) number of persons erroneously enumerated
- 4) number of persons with unresolved enumeration status
- 5) weighted correct enumeration rate for resolved cases

The first four values are all weighted frequencies.

The ten E-Sample before follow-up match code groups are defined in the table. V3 is a variable defined for group 3, partial household nonmatches needing follow-up. Group 3, is divided into two parts. The variable V3a includes persons in group 3 who are 18-29 years old and children of the reference person. V3b includes all other persons in group 3.

See Attachment A, Table A-14, for unweighted frequencies for Imputation Cells Used for Enumeration Status.

**Table 10. Imputation Cells Used for E-Sample Enumeration Status (Weighted Frequencies and Rates)**

Before Follow-up Group		Final Enumeration Status	No Imputes		1 or More Imputes
1 = Matches needing follow-up		Total Persons Correct Enumeration Erroneous Enumeration Persons with Unresolved Enumeration Status Correct Enum. Rate for Resolved Cases (Weighted)	XX,XXX XX,XXX XX,XXX XX,XXX 0.XX		
2 = Possible matches		Total Persons Correct Enumeration Erroneous Enumeration Persons with Unresolved Enumeration Status Correct Enum. Rate for Resolved Cases (Weighted)			
3 = Partial household nonmatches	V3a	Total Persons Correct Enumeration Erroneous Enumeration Persons with Unresolved Enumeration Status Correct Enum. Rate for Resolved Cases (Weighted)			
	V3b	Total Persons Correct Enumeration Erroneous Enumeration Persons with Unresolved Enumeration Status Correct Enum. Rate for Resolved Cases (Weighted)			
4 = Whole household nonmatches where the housing unit matched; not conflicting households		Total Persons Correct Enumeration Erroneous Enumeration Persons with Unresolved Enumeration Status Correct Enum. Rate for Resolved Cases (Weighted)	Non-Hispanic White	Others	
5 = Nonmatches from conflicting households; for housing units not in regular nonresponse follow-up		Total Persons Correct Enumeration Erroneous Enumeration Persons with Unresolved Enumeration Status Correct Enum. Rate for Resolved Cases (Weighted)			
6 = Nonmatches from conflicting households; housing units in regular nonresponse follow-up		Total Persons Correct Enumeration Erroneous Enumeration Persons with Unresolved Enumeration Status Correct Enum. Rate for Resolved Cases (Weighted)			
7 = Whole household nonmatches, where the housing unit did not match in housing unit matching		Total Persons Correct Enumeration Erroneous Enumeration Persons with Unresolved Enumeration Status Correct Enum. Rate for Resolved Cases (Weighted)	Non-Hispanic White	Others	
8 = Resolved before follow-up		Total Persons Correct Enumeration Erroneous Enumeration Persons with Unresolved Enumeration Status Correct Enum. Rate for Resolved Cases (Weighted)	Non-Hispanic White	Others	
9 = Insufficient information for matching		Total Persons Correct Enumeration Erroneous Enumeration Persons with Unresolved Enumeration Status Correct Enum. Rate for Resolved Cases (Weighted)			
10 = Geocoding-TES Cases		Total Persons Correct Enumeration Erroneous Enumeration Persons with Unresolved Enumeration Status Correct Enum. Rate for Resolved Cases (Weighted)			
TOTAL		Total Persons Correct Enumeration Erroneous Enumeration Persons with Unresolved Enumeration Status Correct Enum. Rate for Resolved Cases (Weighted)			

In Table 11, the P Sample is divided according to before follow-up match status × final match status. Here, the before follow-up match status includes information on whether or not the person was sent to follow-up, and further classification. The results allow us to follow groups of individuals who started with one match status and see what their final match status was.

**Table 11. P-Sample Before Follow-Up Match Status by Final Match Status (Unweighted Frequencies)**

<b>Before Follow-Up Match Status (Unweighted)</b>	<b>Final Match Status (Unweighted)</b>			
	<b>Match</b>	<b>Nonmatch</b>	<b>Unresolved Match Status</b>	<b>Total</b>
<b>Total Persons</b>	<b>XXX,XXX</b>	<b>XX,XXX</b>	<b>XX,XXX</b>	<b>XXX,XXX</b>
<b>Sent to Follow-Up</b>				
<b>Match</b>				
<b>Nonmatch</b>				
<b>Possible Match</b>				
<b>Not Sent to Follow-Up</b>				
<b>Resolved Before Follow-Up</b>				
<b>Insufficient Information</b>	<b>0</b>	<b>0</b>		

In Table 12, each person in the P Sample is classified according to final resident status and final match status.

**Table 12. Final Match Status by Final Resident Status (Unweighted)**

<b>Final Resident Status (Unweighted)</b>	<b>Final Match Status (Unweighted)</b>			
	<b>Match</b>	<b>Nonmatch</b>	<b>Unresolved Match Status</b>	<b>Total</b>
<b>Confirmed Resident</b>	<b>XXX,XXX</b>	<b>XX,XXX</b>	<b>0</b>	<b>XXX,XXX</b>
<b>Confirmed Nonresident</b>			<b>0</b>	
<b>Unresolved Resident Status</b>				

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**Table A-1. Status of A.C.E. Household Interviews for Census Day and A.C.E. Interview Day by State**  
**(Weighted Frequencies and Rates)**  
 (Within cells, first row refers to Census Day, second row refers to A.C.E. Interview Day)

States	Total (Wgt.)	Interviews (%)	Noninterviews (%)	Vacants (%)	Deletes (%)	Unweighted Interview Rate	Weighted Interview Rate
U.S. Total	xxx,xxx xxx,xxx	xxx,xxx (xx.x %) xxx,xxx (xx.x %)	xx,xxx (xx.x %) xx,xxx (xx.x %)	xx,xxx (xx.x %) xx,xxx (xx.x %)	xx,xxx (xx.x %) xx,xxx (xx.x %)	xx.x % xx.x %	xx.x % xx.x %
Alabama							
Alaska							
Arizona							
Arkansas							
California							
Colorado							
Connecticut							
Delaware							
D.C.							
Florida							
Georgia							
Hawaii							
Idaho							
Illinois							
Indiana							
Iowa							
Kansas							
Kentucky							
Louisiana							
Maine							
Maryland							
Massachusetts							
Michigan							
Minnesota							
Mississippi							

**Table A-1. (Cont.) Status of A.C.E. Household Interviews for Census Day and A.C.E. Interview Day by State**  
**(Weighted Frequencies and Rates)**

(Within cells, first row refers to Census Day, second row refers to A.C.E. Interview Day)

States	Total (Wgt.)	Interviews (%)	Noninterviews (%)	Vacants (%)	Deletes (%)	Unweighted Interview Rate	Weighted Interview Rate
U.S. Total	xxx,xxx xxx,xxx	xxx,xxx (xx.x %) xxx,xxx (xx.x %)	xx,xxx (xx.x %) xx,xxx (xx.x %)	xx,xxx (xx.x %) xx,xxx (xx.x %)	xx,xxx (xx.x %) xx,xxx (xx.x %)	xx.x % xx.x %	xx.x % xx.x %
Missouri							
Montana							
Nebraska							
Nevada							
New Hampshire							
New Jersey							
New Mexico							
New York							
North Carolina							
North Dakota							
Ohio							
Oklahoma							
Oregon							
Pennsylvania							
Rhode Island							
South Carolina							
South Dakota							
Tennessee							
Texas							
Utah							
Vermont							
Virginia							
Washington							
West Virginia							
Wisconsin							
Wyoming							

Table A-2. P-Sample Characteristic Imputation Percent Rates by State (Unweighted Frequencies and Rates)

States	Total Persons (Unweighted)	Percentage of Persons with Imputed Characteristic (Unweighted)					Percentage of Persons with 1 or More Imputed Characteristics
		Age	Sex	Tenure	Race	Hispanic Origin	
<b>U.S. Total</b>	<b>xxx,xxx</b>	<b>xx.x %</b>	<b>xx.x %</b>	<b>xx.x %</b>	<b>xx.x %</b>	<b>xx.x %</b>	<b>xx.x %</b>
Alabama							
Alaska							
Arizona							
Arkansas							
California							
Colorado							
Connecticut							
Delaware							
D.C.							
Florida							
Georgia							
Hawaii							
Idaho							
Illinois							
Indiana							
Iowa							
Kansas							
Kentucky							
Louisiana							
Maine							
Maryland							
Massachusetts							
Michigan							
Minnesota							
Mississippi							
Missouri							
Montana							
Nebraska							
Nevada							
New Hampshire							
New Jersey							
New Mexico							
New York							
North Carolina							
North Dakota							

**Table A-2 (Cont.). P-Sample Characteristic Imputation Percent Rates by State  
(Unweighted Frequencies and Rates)**

States	Total Persons (Unweighted)	Percentage of Persons with Imputed Characteristic (Unweighted)					Percentage of Persons with 1 or More Imputed Characteristics
		Age	Sex	Tenure	Race	Hispanic Origin	
<b>U.S. Total</b>	<b>xxx,xxx</b>	<b>xx.x %</b>	<b>xx.x %</b>	<b>xx.x %</b>	<b>xx.x %</b>	<b>xx.x %</b>	<b>xx.x %</b>
Ohio							
Oklahoma							
Oregon							
Pennsylvania							
Rhode Island							
South Carolina							
South Dakota							
Tennessee							
Texas							
Utah							
Vermont							
Virginia							
Washington							
West Virginia							
Wisconsin							
Wyoming							

**Table A-3. Characteristic Imputation Percent Rates for the P Sample by Age**

(Within cells, the first row contains unweighted frequencies or rates; the second row contains weighted frequencies or rates.)

AGE	Total Persons	Percentage of Persons With Imputed Characteristic					Percentage of Persons with 1 or More Imputed Characteristics
		Age	Sex	Tenure	Race	Hispanic Origin	
0-17	XXX,XXX	0 %	XX.X %	XX.X %	XX.X %	XX.X %	XX.X %
	XXX,XXX	0 %	XX.X %	XX.X %	XX.X %	XX.X %	XX.X %
18-29		0 %					
30-49		0 %					
50 +		0 %					
Missing Age		100 %					100 %

**Table A-4. Characteristic Imputation Percent Rates for the P Sample by Sex**

(Within cells, the first row contains unweighted frequencies or rates; the second row contains weighted frequencies or rates.)

SEX	Total Persons	Percentage of Persons With Imputed Characteristic					Percentage of Persons with 1 or More Imputed Characteristics
		Age	Sex	Tenure	Race	Hispanic Origin	
Male	XXX,XXX	XX.X %	0 %	XX.X %	XX.X %	XX.X %	XX.X %
	XXX,XXX	XX.X %	0 %	XX.X %	XX.X %	XX.X %	XX.X %
Female			0 %				
Missing Sex			100 %				100 %

**Table A-5. Characteristic Imputation Percent Rates for the P Sample by Tenure**

(Within cells, the first row contains unweighted frequencies or rates; the second row contains weighted frequencies or rates.)

TENURE	Total Persons	Percentage of Persons With Imputed Characteristic					Percentage of Persons with 1 or More Imputed Characteristics
		Age	Sex	Tenure	Race	Hispanic Origin	
Owner	XXX,XXX	XX.X %	XX.X %	0 %	XX.X %	XX.X %	XX.X %
	XXX,XXX	XX.X %	XX.X %	0 %	XX.X %	XX.X %	XX.X %
Non-owner				0 %			
Missing Tenure				100 %			100 %

**Table A-6. Characteristic Imputation Percent Rates for the P Sample by Race**

(Within cells, the first row contains unweighted frequencies or rates; the second row contains weighted frequencies or rates.)

RACE	Total Persons	Percentage of Persons With Imputed Characteristic					Percentage of Persons with 1 or More Imputed Characteristics
		Age	Sex	Tenure	Race	Hispanic Origin	
Single Race	XXX,XXX	XX.X %	XX.X %	XX.X %	0 %	XX.X %	XX.X %
	XXX,XXX	XX.X %	XX.X %	XX.X %	0 %	XX.X %	XX.X %
White					0 %		
Black					0 %		
Asian					0 %		
AIAN <sup>9</sup>					0 %		
NHPI <sup>10</sup>					0 %		
Other					0 %		
Multi-Race					0 %		
Missing Race					100 %		100 %

<sup>9</sup> American Indian or Alaskan Native<sup>10</sup> Native Hawaiian or Pacific Islander

**Table A-7. Characteristic Imputation Percent Rates for the P Sample by Hispanic Origin**

(Within cells, the first row contains unweighted frequencies or rates; the second row contains weighted frequencies or rates.)

HISPANIC ORIGIN	Total Persons	Percentage of Persons With Imputed Characteristic					Percentage of Persons with 1 or More Imputed Characteristics
		Age	Sex	Tenure	Race	Hispanic Origin	
Hispanic	XXX,XXX	XX.X %	XX.X %	XX.X %	XX.X %	0 %	XX.X %
	XXX,XXX	XX.X %	XX.X %	XX.X %	XX.X %	0 %	XX.X %
Non-Hispanic						0 %	
Missing Hispanic Origin						100 %	100 %

**Table A-8. Characteristic Imputation Percent Rates for the P Sample by Mover Status by Proxy Response Status**

(Within cells, the first row contains unweighted frequencies or rates; the second row contains weighted frequencies or rates.)

MOVER STATUS	Total Persons	Percentage of Persons With Imputed Characteristic					Percentage of Persons with 1 or More Imputed Characteristics
		Age	Sex	Tenure	Race	Hispanic Origin	
Non-mover	XXX,XXX	XX.X %	XX.X %	XX.X %	XX.X %	XX.X %	XX.X %
	XXX,XXX	XX.X %	XX.X %	XX.X %	XX.X %	XX.X %	XX.X %
Non-proxy							
Proxy							
In-mover							
Non-proxy							
Proxy							
Out-mover							
Non-proxy							
Proxy							

Table A-9. Final Resident Status for the P Sample by State (Weighted Frequencies and Rates)

	Total Persons (Weighted)	Final Resident Status (Weighted)			Resident Rate for Resolved Cases (Weighted)
		Confirmed Resident	Confirmed Nonresident	Unresolved Resident Status	
U.S. Total	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
Alabama					
Alaska					
Arizona					
Arkansas					
California					
Colorado					
Connecticut					
Delaware					
D.C.					
Florida					
Georgia					
Hawaii					
Idaho					
Illinois					
Indiana					
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland					
Massachusetts					
Michigan					
Minnesota					
Mississippi					



Table A-9 (Cont.). Final Resident Status for the P Sample by State (Weighted Frequencies and Rates)

	Total Persons (Weighted)	Final Resident Status (Weighted)			Resident Rate for Resolved Cases (Weighted)
		Confirmed Resident	Confirmed Nonresident	Unresolved Resident Status	
U.S. Total	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
Missouri					
Montana					
Nebraska					
Nevada					
New Hampshire					
New Jersey					
New Mexico					
New York					
North Carolina					
North Dakota					
Ohio					
Oklahoma					
Oregon					
Pennsylvania					
Rhode Island					
South Carolina					
South Dakota					
Tennessee					
Texas					
Utah					
Vermont					
Virginia					
Washington					
West Virginia					
Wisconsin					
Wyoming					

Table A-10. Final Match Status for the P Sample by State (Weighted Frequencies and Rates)

	Total Persons (Weighted)	Final Match Status (Weighted)			Match Rate for Resolved Cases (Weighted)
		Match	Nonmatch	Unresolved Match Status	
U.S. Total	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
Alabama					
Alaska					
Arizona					
Arkansas					
California					
Colorado					
Connecticut					
Delaware					
D.C.					
Florida					
Georgia					
Hawaii					
Idaho					
Illinois					
Indiana					
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland					
Massachusetts					
Michigan					
Minnesota					
Mississippi					

Table A-10 (Cont.) Final Match Status for the P Sample by State (Weighted Frequencies and Rates)

	Total Persons (Weighted)	Final Match Status (Weighted)			Match Rate for Resolved Cases (Weighted)
		Match	Nonmatch	Unresolved Match Status	
U.S. Total	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
Missouri					
Montana					
Nebraska					
Nevada					
New Hampshire					
New Jersey					
New Mexico					
New York					
North Carolina					
North Dakota					
Ohio					
Oklahoma					
Oregon					
Pennsylvania					
Rhode Island					
South Carolina					
South Dakota					
Tennessee					
Texas					
Utah					
Vermont					
Virginia					
Washington					
West Virginia					
Wisconsin					
Wyoming					

Table A-11. Final Enumeration Status for the E Sample by State (Weighted Frequencies and Rates)

	Total Persons (Weighted)	Final Enumeration Status (Weighted)			Correct Enumeration Rate for Resolved Cases (Weighted)
		Correct Enumeration	Erroneous Enumeration	Unresolved Enumeration Status	
U.S. Total	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
Alabama					
Alaska					
Arizona					
Arkansas					
California					
Colorado					
Connecticut					
Delaware					
D.C.					
Florida					
Georgia					
Hawaii					
Idaho					
Illinois					
Indiana					
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland					
Massachusetts					
Michigan					
Minnesota					
Mississippi					

Table A-11 (Cont). Final Enumeration Status for the E Sample by State (Weighted Frequencies and Rates)

	Total Persons (Weighted)	Final Enumeration Status (Weighted)			Correct Enumeration Rate for Resolved Cases (Weighted)
		Correct Enumeration	Erroneous Enumeration	Unresolved Enumeration Status	
U.S. Total	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
Missouri					
Montana					
Nebraska					
Nevada					
New Hampshire					
New Jersey					
New Mexico					
New York					
North Carolina					
North Dakota					
Ohio					
Oklahoma					
Oregon					
Pennsylvania					
Rhode Island					
South Carolina					
South Dakota					
Tennessee					
Texas					
Utah					
Vermont					
Virginia					
Washington					
West Virginia					
Wisconsin					
Wyoming					

Table A-12. Imputation Cells Used for P-Sample Resident Status (Unweighted Frequencies)

Before Follow-Up Match Code Group		Final Resident Status (Unweighted)	Owner		Non-owner	
			Non- Hispanic White Only	Others	Non- Hispanic White Only	Others
1 = Matches needing follow-up		TOTAL PERSONS	XX,XXX	XX,XXX	XX,XXX	XX,XXX
		Confirmed Residents	XX,XXX			
		Confirmed Nonresidents	XX,XXX			
		Persons w/ Unresolved Resident Status	XX,XXX			
2 = Possible matches		TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons w/ Unresolved Resident Status				
3 = Partial household nonmatches needing follow-up	V3a	TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons w/ Unresolved Resident Status				
	V3b	TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons w/ Unresolved Resident Status				
4 = Whole household nonmatches needing follow-up, not conflicting households		TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons w/ Unresolved Resident Status				
5 = Nonmatches from conflicting households		TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons w/ Unresolved Resident Status				
6 = Resolved before follow-up		TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons w/ Unresolved Resident Status				
7 = Insufficient information for matching		TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons w/ Unresolved Resident Status				
TOTAL		TOTAL PERSONS				
		Confirmed Residents				
		Confirmed Nonresidents				
		Persons w/ Unresolved Resident Status				

Table A-13. Imputation Cells Used for P-Sample Match Status (Unweighted Frequencies)

Mover Status	Final Match Status (Unweighted)	Housing-Unit Address Match Code			
		Housing unit was a match (code 1)		Housing unit was a Nonmatch or the household is conflicting (code 2 or 4)	
		No imputes	1 or more imputes	No imputes	1 or more imputes
Non-mover	Total Persons	XX,XXX			
	Matched	XX,XXX			
	Nonmatched	XX,XXX			
	Persons with Unresolved Match Status	XX,XXX			
Out-mover	Total Persons				
	Matched				
	Nonmatched				
	Persons with Unresolved Match Status				
TOTAL	Total Persons				
	Matched				
	Nonmatched				
	Persons with Unresolved Match Status				

Table A-14. Imputation Cells Used for E-Sample Enumeration Status (Unweighted Frequencies)

Before Follow-up Group		Final Enumeration Status		No Imputes		1 or More Imputes
1 = Matches needing follow-up		Total Persons		XX,XXX		
		Correct Enumeration		XX,XXX		
		Erroneous Enumeration		XX,XXX		
		Persons with Unresolved Enumeration Status		XX,XXX		
2 = Possible matches		Total Persons				
		Correct Enumeration				
		Erroneous Enumeration				
		Persons with Unresolved Enumeration Status				
3 = Partial household nonmatches	V3a	Total Persons				
		Correct Enumeration				
		Erroneous Enumeration				
		Persons with Unresolved Enumeration Status				
	V3b	Total Persons				
		Correct Enumeration				
		Erroneous Enumeration				
		Persons with Unresolved Enumeration Status				
4 = Whole household nonmatches where the housing unit matched; not conflicting households			Non-Hispanic White	Others		
		Total Persons				
		Correct Enumeration				
		Erroneous Enumeration				
		Persons with Unresolved Enumeration Status				
5 = Nonmatches from conflicting households; for housing units not in regular nonresponse follow-up		Total Persons				
		Correct Enumeration				
		Erroneous Enumeration				
		Persons with Unresolved Enumeration Status				
6 = Nonmatches from conflicting households; housing units in regular nonresponse follow-up		Total Persons				
		Correct Enumeration				
		Erroneous Enumeration				
		Persons with Unresolved Enumeration Status				
7 = Whole household nonmatches, where the housing unit did not match in housing unit matching			Non-Hispanic White	Others		
		Total Persons				
		Correct Enumeration				
		Erroneous Enumeration				
		Persons with Unresolved Enumeration Status				
8 = Resolved before follow-up			Non-Hispanic White	Others		
		Total Persons				
		Correct Enumeration				
		Erroneous Enumeration				
9 = Insufficient information for matching		Total Persons		XX,XXX		XX,XXX
		Correct Enumeration		0		0
		Erroneous Enumeration		XX,XXX		XX,XXX
		Persons with Unresolved Enumeration Status		0.0		0.0
10 = Geocoding-TES Cases		Total Persons				
		Correct Enumeration				
		Erroneous Enumeration				
		Persons with Unresolved Enumeration Status				
TOTAL		Total Persons				
		Correct Enumeration				
		Erroneous Enumeration				
		Persons with Unresolved Enumeration Status				



NOTE: Tables A-15 through A-26 show Weighted Data.

Table A-15. Effect of Imputation for Resident Status for *Non-movers and Out-movers* (By Post-Stratum Aggregated Across Age and Sex)

Aggregated Post-Stratum Code	Mover Status	Total Persons (Weighted)	Final Resident Status (Weighted)			Proportion of Residents for Resolved Cases (Weighted)
			Confirmed Resident	Confirmed Nonresident	Unresolved Resident Status	
01	Non-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
	Out-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
02						
64						

**Table A-16. Effect of Imputation for Resident Status for *Non-movers and Out-movers* (By Post-Stratum Aggregated by Race/Ethnicity Domains)**

Aggregated (Collapsed) Post-strata	Mover Status	Total Persons (Weighted)	Final Resident Status (Weighted)			Proportion of Residents for Resolved Cases (Weighted)
			Confirmed Resident	Confirmed Nonresident	Unresolved Resident Status	
Domain 1 American Indian or Alaska Native (On Reservation)	Non-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
	Out-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
Domain 2 American Indian or Alaska Native (Off Reservation)	Non-mover					
	Out-mover					
Domain 3 (Hispanic)	Non-mover					
	Out-mover					
Domain 4 (Non-Hispanic Black)	Non-mover					
	Out-mover					
Domain 5 (Native Hawaiian or Pacific Islander)	Non-mover					
	Out-mover					
Domain 6 (Non-Hispanic Asian)	Non-mover					
	Out-mover					
Domain 7 (Non-Hispanic White or "Some other race")	Non-mover					
	Out-mover					

Table A-17. Effect of Imputation for Resident Status for *Non-movers and Out-movers* (By Post-Stratum Aggregated by Tenure)

Aggregated (Collapsed) Post-strata	Mover Status	Total Persons (Weighted)	Final Resident Status (Weighted)			Proportion of Residents for Resolved Cases (Weighted)
			Confirmed Resident	Confirmed Nonresident	Unresolved Resident Status	
Owner	Non-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
	Out-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
Non-owner	Non-mover					
	Out-mover					

Table A-18. Effect of Imputation for Resident Status for *Non-movers and Out-movers* (By Post-Stratum Aggregated by Return Rate)

Aggregated (Collapsed) Post-strata	Mover Status	Total Persons (Weighted)	Final Resident Status (Weighted)			Proportion of Residents for Resolved Cases (Weighted)
			Confirmed Resident	Confirmed Nonresident	Unresolved Resident Status	
Low Return Rate	Non-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
	Out-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
High Return Rate	Non-mover					
	Out-mover					
Not Specified (Domains 1,2,5,6)	Non-mover					
	Out-mover					

Table A-19. Effect of Imputation for Match Status for *Non-movers and Out-movers* (By Post-Stratum Aggregated Across Age and Sex)

Aggregated Post-Stratum Code	Mover Status	Total Persons (Weighted)	Final Match Status (Weighted)			Proportion of Matches for Resolved Cases (Weighted)
			Match	Nonmatch	Unresolved Match Status	
01	Non-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
	Out-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
02						
64						

**Table A-20. Effect of Imputation for Match Status for *Non-movers and Out-movers* (By Post-Stratum Aggregated by Race/Ethnicity Domain)**

Aggregated (Collapsed) Post-strata	Mover Status	Total Persons (Weighted)	Final Match Status (Weighted)			Proportion of Matches for Resolved Cases (Weighted)
			Match	Nonmatch	Unresolved Match Status	
Domain 1 American Indian or Alaska Native (On Reservation)	Non-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
	Out-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
Domain 2 American Indian or Alaska Native (Off Reservation)	Non-mover					
	Out-mover					
Domain 3 (Hispanic)	Non-mover					
	Out-mover					
Domain 4 (Non-Hispanic Black)	Non-mover					
	Out-mover					
Domain 5 (Native Hawaiian or Pacific Islander)	Non-mover					
	Out-mover					
Domain 6 (Non-Hispanic Asian)	Non-mover					
	Out-mover					
Domain 7 (Non-Hispanic White or "Some other race")	Non-mover					
	Out-mover					

**Table A-21. Effect of Imputation for Match Status for *Non-movers and Out-movers* (By Post-Stratum Aggregated by Tenure)**

Aggregated (Collapsed) Post-strata	Mover Status	Total Persons (Weighted)	Final Match Status (Weighted)			Proportion of Matches for Resolved Cases (Weighted)
			Match	Nonmatch	Unresolved Match Status	
Owner	Non-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
	Out-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
Non-owner	Non-mover					
	Out-mover					

**Table A-22. Effect of Imputation for Match Status for *Non-movers and Out-movers* (By Post-Stratum Aggregated by Return Rate)**

Aggregated (Collapsed) Post-strata	Mover Status	Total Persons (Weighted)	Final Match Status (Weighted)			Proportion of Matches for Resolved Cases (Weighted)
			Match	Nonmatch	Unresolved Match Status	
Low Return Rate	Non-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
	Out-mover	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	0.XX
High Return Rate	Non-mover					
	Out-mover					
Not Specified (Domains 1,2,5, 6)	Non-mover					
	Out-mover					

**Table A-23. Effect of Imputation for Enumeration Status (By Post-Stratum Aggregated Across Age and Sex)**

Aggregated Post-Stratum Code	Total Persons (Weighted)	Final Enumeration Status (Weighted)			Proportion Correctly Enumerated for Resolved Cases (Weighted)
		Correct Enumeration	Erroneous Enumeration	Unresolved Enumeration Status	
01	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XX.X
02					
64					

**Table A-24. Effect of Imputation for Enumeration Status (By Post-Stratum Aggregated by Race/Ethnicity Domain)**

Aggregated (Collapsed) Post-strata	Total Persons (Weighted)	Final Enumeration Status (Weighted)			Proportion Correctly Enumerated for Resolved Cases (Weighted)
		Correct Enumeration	Erroneous Enumeration	Unresolved Enumeration Status	
Domain 1 American Indian or Alaska Native (On Reservation)	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XX.X
Domain 2 American Indian or Alaska Native (Off Reservation)					
Domain 3 (Hispanic)					
Domain 4 (Non-Hispanic Black)					
Domain 5 (Native Hawaiian or Pacific Islander)					
Domain 6 (Non-Hispanic Asian)					
Domain 7 (Non-Hispanic White or "Some other race")					

Table A-25. Effect of Imputation for Enumeration Status (By Post-Stratum Aggregated by Tenure)

Aggregated (Collapsed) Post-strata	Total Persons (Weighted)	Final Enumeration Status (Weighted)			Proportion Correctly Enumerated for Resolved Cases (Weighted)
		Correct Enumeration	Erroneous Enumeration	Unresolved Enumeration Status	
Owner	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XX.X
Non-owner					

Table A-26. Effect of Imputation for Enumeration Status (By Post-Stratum Aggregated by Return Rate)

Aggregated (Collapsed) Post-strata	Total Persons (Weighted)	Final Enumeration Status (Weighted)			Proportion Correctly Enumerated for Resolved Cases (Weighted)
		Correct Enumeration	Erroneous Enumeration	Unresolved Enumeration Status	
Low Return Rate	XXX,XXX	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XXX,XXX (XX.X %)	XX.X
High Return Rate					
Not Specified (Domains 1,2,5,6)					

## Final Census Day Interview Outcome

The final census day outcome codes are in Table A-27. Changes as a result of the follow-up interview are

- Whole households of P-sample people who said they lived elsewhere on census day are converted to a noninterviews.
- Whole households who lived in group quarters on census day or should have been enumerated at another residence are converted to vacant.

**Table A-27. Final Census Day Estimation Outcome Codes  
for P-sample Housing Units (Weighted) \*\***

<b>OUTCOME CODE</b>	<b>Housing Units (Weighted)</b>	<b>Percent (Weighted)</b>
<b>Interviews</b>		
Complete interview with a household member		
Complete interview with a proxy respondent		
Partial interview		
<b>Noninterviews</b>		
No census day residents - household converted to noninterview		
Field noninterview		
All people have insufficient information for matching and follow-up		
<b>Vacants</b>		
No census day residents - vacant		
Vacant on census day		
<b>Deletes</b>		
Not a housing unit on census day		
<b>TOTAL</b>		

\*\* Checking to see if data are available to create this table.



**Final A.C.E. Interview Day Interview Outcome**

The final interview day outcome codes are in Table A-28. The interview outcome as of A.C.E. interview day is for the non-movers and the in-movers. Changes as a result of the follow-up interview are in whole households of non-movers who said they lived elsewhere, in group quarters, or have another residence where they should have been counted on census day are converted to noninterviews.

**Table A-28. Final A.C.E. Interview Day Estimation Outcome Codes  
for P-sample Housing Units (Weighted) \*\***

<b>OUTCOME CODE</b>	<b>Housing Units (Weighted)</b>	<b>Percent (Weighted)</b>
<b>Interviews</b>		
Complete interview with a household member		
Complete interview with a proxy respondent		
Partial interview		
<b>Noninterviews</b>		
No A.C.E. interview day residents - household converted to noninterview		
Field noninterview		
Refusal		
Unable to contact knowledgeable respondent		
Language problems		
All people have insufficient information for matching and follow-up		
<b>Vacants</b>		
Vacant on A.C.E. interview day		
<b>Deletes</b>		
Not a housing unit on A.C.E. interview day		
<b>TOTAL</b>		

\*\* Checking to see if data are available to create this table.

## Attachment A

The percent P-sample not matched and E-sample erroneous enumeration are contained in Table A-29 by census region, in Table A-30 by census regional office, in Table A-31 by type of enumeration area, in Table A-32 by respondent type, in Table A-33 by age, in Table A-34 by sex, in Table A-35 by tenure, in Table A-36 by race, in Table A-37 by Hispanic origin, in Table A-38 by metropolitan statistical area (MSA), and in Table A-39 by mail return rates. The percent P-sample not matched is one hundred times the Nonmatch rate.

$$\text{Nonmatch Rate} = \frac{\text{Not Matched}}{\text{Matched} + \text{Not Matched}}$$

The percent E-sample erroneous enumeration is one hundred times the erroneous enumeration rate.

$$\text{Erroneous Enumeration rate} = \frac{\text{Erroneous Enumeration}}{\text{Correct Enumeration} + \text{Erroneous Enumeration}}$$

Both percentages are of weighted resolved people. The weighting and imputation process happens after the matching is completed.

**Table A-29. Percent Not Matched and Erroneously Enumerated  
After Follow-up by Census Region (Resolved Cases Only, Weighted) \*\***

<b>CENSUS REGION</b>	<b>P-sample Percent Not Matched</b>	<b>E-sample Percent Erroneous Enumeration</b>
<b>Northeast</b>		
<b>South</b>		
<b>Midwest</b>		
<b>West</b>		
<b>TOTAL</b>		

\*\* Checking to see if data are available to create this table.

**Table A-30. Percent Not Matched and Erroneously Enumerated  
After Follow-up by Census Regional Office (Resolved Cases Only, Weighted) \*\***

<b>CENSUS REGIONAL OFFICE</b>	<b>P-sample Percent Not Matched</b>	<b>E-sample Percent Erroneous Enumeration</b>
<b>Boston</b>		
<b>New York</b>		
<b>Philadelphia</b>		
<b>Detroit</b>		
<b>Chicago</b>		
<b>Kansas City</b>		
<b>Seattle</b>		
<b>Charlotte</b>		
<b>Atlanta</b>		
<b>Dallas</b>		
<b>Denver</b>		
<b>Los Angeles</b>		
<b>TOTAL</b>		

**Table A-31. Percent Not Matched and Erroneously Enumerated  
After Follow-up by Type of Enumeration Area (Resolved Cases Only, Weighted) \*\***

<b>TYPE OF ENUMERATION AREA</b>	<b>P-sample Percent Not Matched</b>	<b>E-sample Percent Erroneous Enumeration</b>
<b>Mail Out / Mail Back</b>		
<b>Update/Leave</b>		
<b>List/Enumerate</b>		
<b>Rural Update/Leave</b>		
<b>Urban Update/Leave</b>		
<b>Urban Update/ Enumerate</b>		
<b>Additions to Address Listing</b>		
<b>TOTAL</b>		

\*\* Checking to see if data are available to create this table.

**Table A-32. Percent Not Matched and Erroneously Enumerated  
After Follow-up by Respondent Type (Resolved Cases Only, Weighted) \*\***

<b>RESPONDENT TYPE</b>	<b>P-sample Percent Not Matched</b>	<b>E-sample Percent Erroneous Enumeration</b>
<b>Non-proxy</b>		
<b>Proxy</b>		
<b>TOTAL</b>		

**Table A-33. Percent Not Matched and Erroneously Enumerated  
After Follow-up by Age (Resolved Cases Only, Weighted) \*\***

<b>AGE</b>	<b>P-sample Percent Not Matched</b>	<b>E-sample Percent Erroneous Enumeration</b>
<b>0 - 17</b>		
<b>18 - 29</b>		
<b>30 - 49</b>		
<b>50 +</b>		
<b>TOTAL</b>		

**Table A-34. Percent Not Matched and Erroneously Enumerated  
After Follow-up by Sex (Resolved Cases Only, Weighted) \*\***

<b>SEX</b>	<b>P-sample Percent Not Matched</b>	<b>E-sample Percent Erroneous Enumeration</b>
<b>Male</b>		
<b>Female</b>		
<b>TOTAL</b>		

**Table A-35. Percent Not Matched and Erroneously Enumerated  
After Follow-up by Tenure (Resolved Cases Only, Weighted) \*\***

<b>TENURE</b>	<b>P-sample Percent Not Matched</b>	<b>E-sample Percent Not Matched</b>
<b>Owner</b>		
<b>Non-owner</b>		
<b>TOTAL</b>		

\*\* Checking to see if data are available to create this table.

**Table A-36. Percent Not Matched and Erroneously Enumerated  
After Follow-up by Race (Resolved Cases Only, Weighted) \*\***

<b>RACE</b>	<b>P-sample Percent Not Matched</b>	<b>E-sample Percent Erroneous Enumeration</b>
<b>White Only</b>		
<b>Black Only</b>		
<b>AIAN Only</b>		
<b>Asian Only</b>		
<b>NHPI Only</b>		
<b>Other Race Only</b>		
<b>Multi-race</b>		
<b>TOTAL</b>		

**Table A-37. Percent Not Matched and Erroneously Enumerated  
After Follow-up by Hispanic Origin (Resolved Cases Only, Weighted) \*\***

<b>HISPANIC ORIGIN</b>	<b>P-sample Percent Not Matched</b>	<b>E-sample Percent Erroneous Enumeration</b>
<b>Hispanic</b>		
<b>Non-Hispanic</b>		
<b>TOTAL</b>		

**\*\* Checking to see if data are available to create this table.**

**Table A-38. Percent Not Matched and Erroneously Enumerated  
After Follow-up by Metropolitan Statistical Area (Resolved Cases Only, Weighted) \*\***

<b>METROPOLITAN STATISTICAL AREA</b>	<b>P-sample Percent Not Matched</b>	<b>E-sample Percent Not Matched</b>
<b>Large</b>		
<b>Medium</b>		
<b>Small</b>		
<b>TOTAL</b>		

**Table A-39. Percent Not Matched and Erroneously Enumerated After Follow-up  
by Mail Return Rates (Resolved Cases Only, Weighted) \*\***

<b>MAIL RETURN RATES</b>	<b>P-sample Percent Not Matched</b>	<b>E-sample Percent Not Matched</b>
<b>Low Return Rate</b>		
<b>High Return Rate</b>		
<b>Not Specified</b>		
<b>TOTAL</b>		

**\*\* Checking to see if data are available to create this table.**